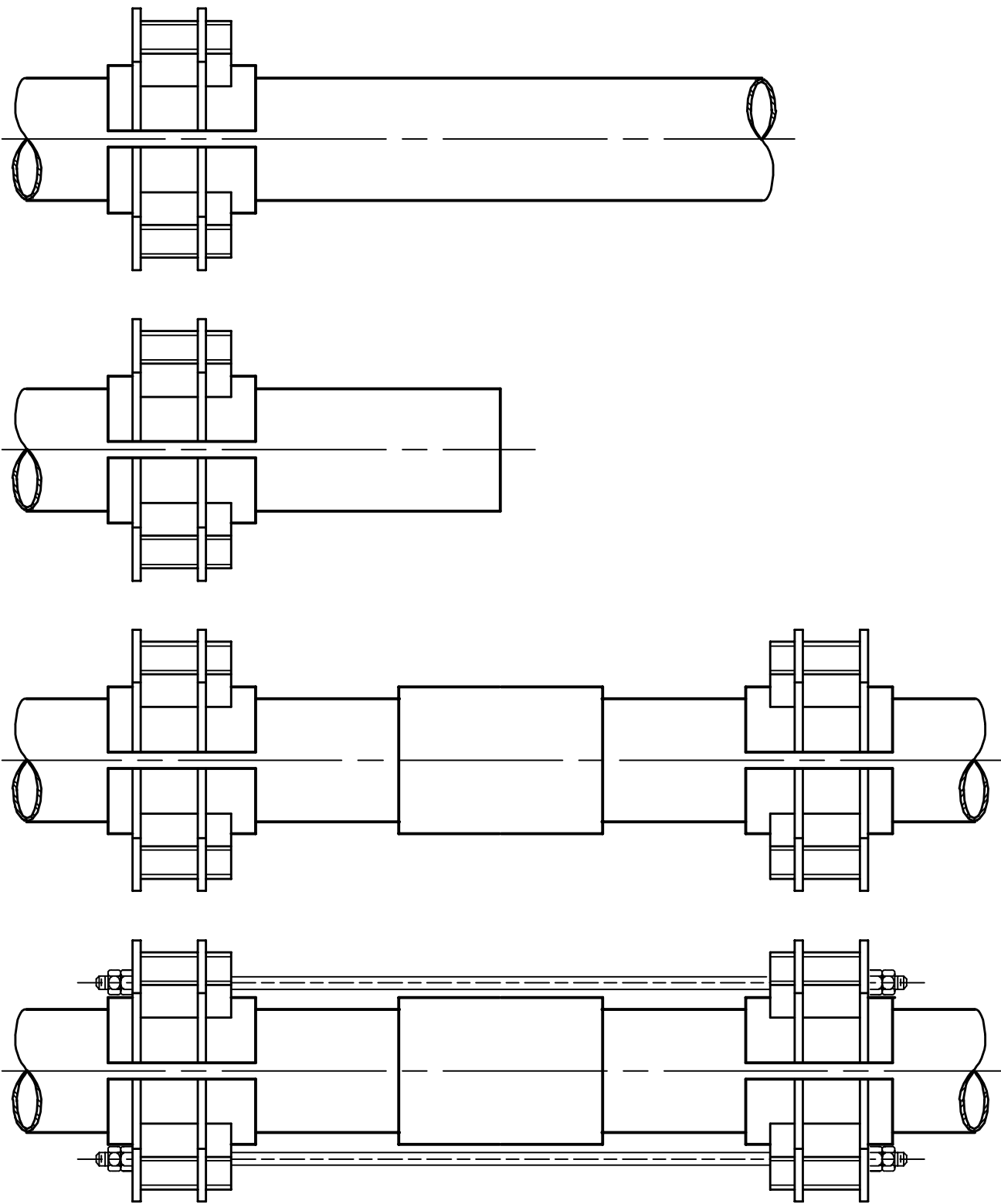


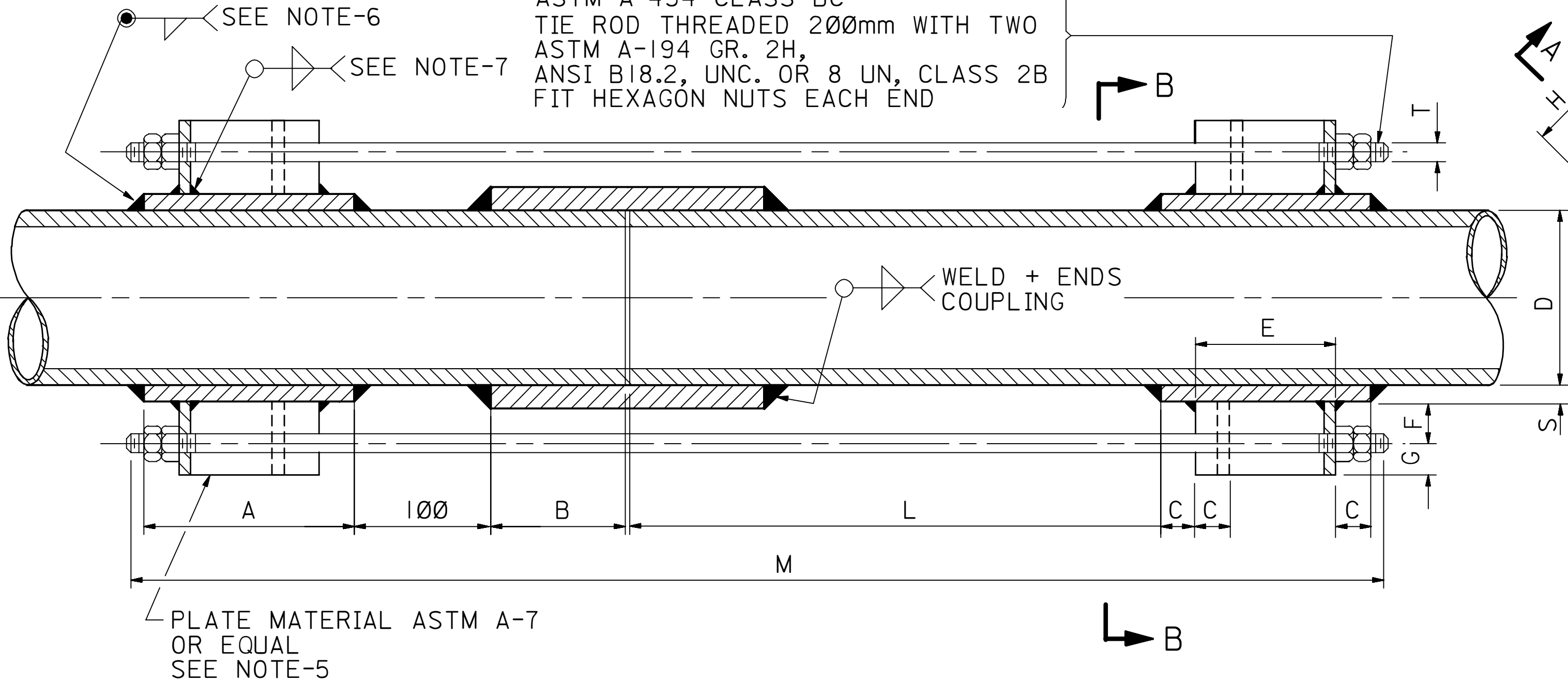
90	100	559950-07	7	066
PLANT NO.	INDEX	DRAWING NO.	SHT. NO.	REV. NO.

INSTALLATION PROCEDURE

- WELD SLEEVE WITH LUGS TO PIPELINE WHILE THIS IS ON STREAM. WELD SLEEVE TO PIPELINE AFTER STEP 3, IF THE LINE IS OUT OF SERVICE, WHEN THERE IS A LEAK FOR EXAMPLE.
- COLD CUT PIPELINE AFTER SHUTTING DOWN AND PREPARE FOR WELD + ENDS COUPLING.
- FIT WELD + ENDS COUPLING AND NEW SPOOL WITH MATCHING LUGS.
- BOLT TIE RODS ACROSS MATCHING LUGS. LINE IS READY TO GO ON STREAM.
- WHEN FLOW HAS BEEN ESTABLISHED, WELD CIRCUMFERENTIAL WELDS ON WELD + ENDS COUPLING.

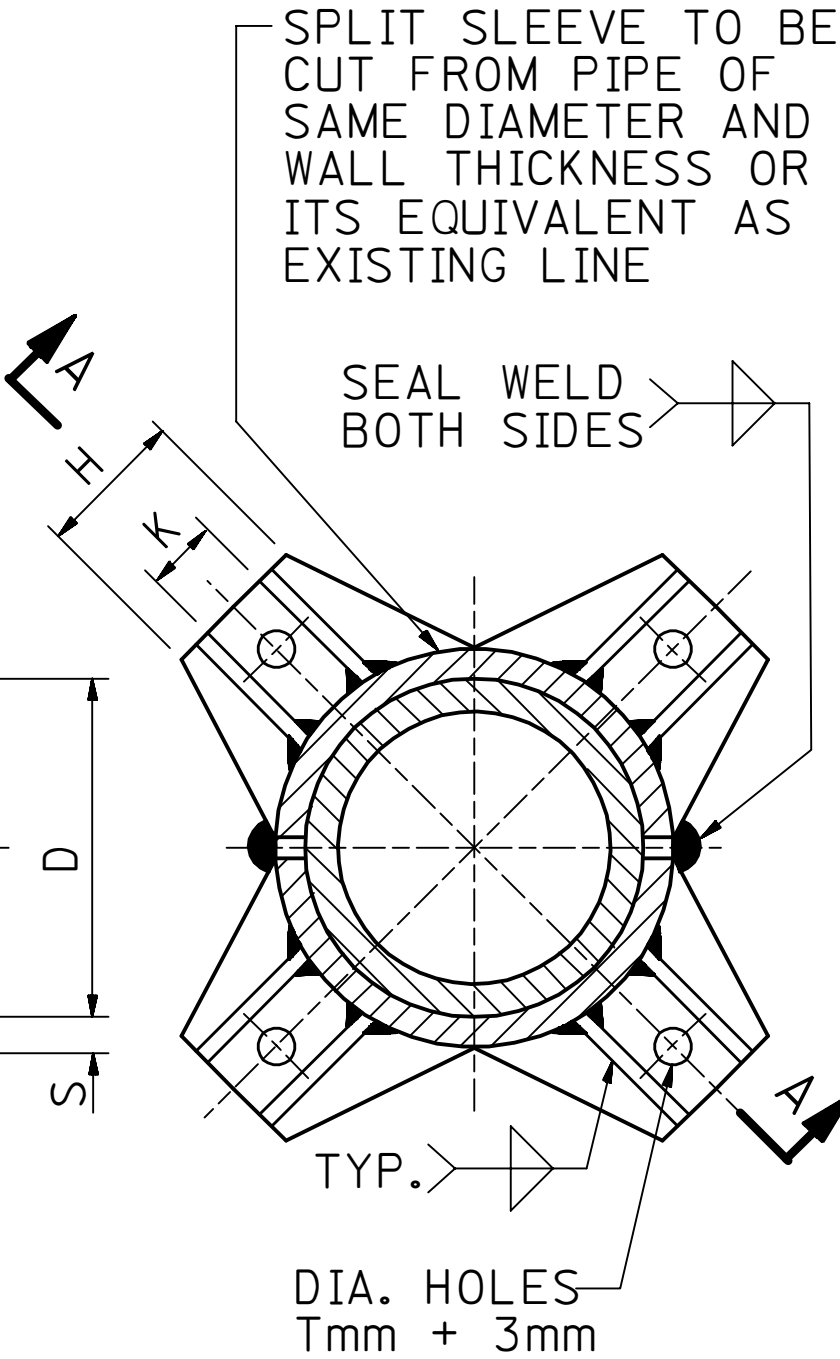


TIE RODS MADE OF ROUND STEEL BAR
ASTM A-434 CLASS BC
TIE ROD THREADED 200mm WITH TWO
ASTM A-194 GR. 2H,
ANSI B18.2, UNC. OR 8 UN, CLASS 2B
FIT HEXAGON NUTS EACH END



SECTION A-A

NOM. PIPE SIZE	TIE ROD SEAT AND STIFFENER PLATES										TIE RODS		NO. OF TIE RODS REQ'D.
	D in.	A mm	B mm	C mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	T in.	
6	240	115	40	160	50	30	90	40	340	1060	3/4	4	
8	240	125	40	160	50	30	90	40	360	1120	3/4	4	
10	240	135	40	160	50	30	90	40	360	1140	3/4	4	
12	240	135	40	160	50	30	90	40	360	1140	3/4	4	
14	300	180	50	200	50	40	100	50	460	1420	7/8	4	
16	300	180	50	200	50	40	100	50	460	1420	1	4	
18	380	205	60	260	100	45	150	60	500	1650	1 1/8	4	
20	380	205	60	260	100	50	150	60	500	1650	1 1/4	4	
22	460	205	80	300	100	50	150	60	500	1820	1 1/4	4	
24	460	205	80	300	100	55	180	80	500	1820	1 3/8	4	
26	460	205	80	300	100	55	180	80	500	1820	1 1/2	4	
30	540	205	80	380	100	70	180	100	500	2040	1 3/4	4	
34	600	205	80	440	100	75	180	100	500	2140	2	4	
36	620	205	80	460	110	90	180	110	500	2180	2 1/4	4	
40	660	205	80	500	100	75	180	100	500	2280	2	6	
42	720	205	80	560	100	75	180	100	500	2380	2	6	
44	720	205	80	560	110	90	180	110	500	2380	2 1/4	6	
46	760	205	80	600	110	90	180	110	500	2480	2 1/4	6	
48	760	205	80	600	110	90	180	110	500	2480	2 1/4	6	



SECTION B-B

NOTES:

- IF NOT INDICATED OTHERWISE ON THE CONSTRUCTION DRAWINGS, TIE ROD ARRANGEMENT SHALL BE INSTALLED AS SHOWN ON THIS STANDARD DRAWING.
- FOR PIPE RESTRAINED BY TIE RODS, MAXIMUM ALLOWABLE PRESSURE BEFORE WELDING IS 1724 kPa (gal).
- THE TIE RODS ARE NOT INTENDED TO REPLACE THE CLAMPING SCREWS ON THE COUPLING. ALL SCREWS MUST BE TIGHTENED CAREFULLY IN ACCORDANCE WITH GI.441.011.
- MAXIMUM TORQUE TO BE APPLIED ON TIE ROD NUTS IS 7N. m BEFORE LOCKING. ALL RODS SHALL HAVE EQUAL TORQUE.
- THICKNESSES OF TIE ROD SEAT AND STIFFENER PLATES SHALL BE EQUAL TO OR GREATER THAN THE SLEEVE THICKNESS.
- CIRCUMFERENTIAL FILLET WELDS: SIZES EQUAL TO SLEEVE THICKNESS.
- TIE ROD SEAT AND STIFFENER FILLET WELDS: SIZES EQUAL TO SLEEVE THICKNESS WHEN SLEEVE THICKNESS IS 10mm OR SMALLER. FILLET WELD SIZE 10mm WHEN SLEEVE THICKNESS IS LARGER THAN 10mm.
- ALL DIMENSIONS ARE IN MILLIMETER UNLESS NOTED OTHERWISE.

REVISION NOTE:-

- REDRAWN, CONSOLIDATED SH. 1 & 2 INTO SH. 1, METRIC VERSION ONLY. ADDED TYPICAL INSTALLATION NOTE.

TYPICAL INSTALLATION DRAWING

06	09-12-88	RLO	SEE REVISION NOTE-1.			
REV. NO.	DATE	BY	DESCRIPTION	CHKD	CERT.	APPD.

FOR ARABIAN AMERICAN OIL COMPANY

DRAWN BY BDH CHECKED BY SCALE: NONE
DATE STARTED - - DATE COMPLETED 06-03-66
OPR'G. DEPT. ENG. DEPT.
APP'D. FOR CONSTR.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED
CERTIFIED DATE

TIE ROD
ARRANGEMENT FOR WELD + ENDS
COUPLING

STD. DWG.			METRIC	
PLANT NO.	INDEX	DRAWING NO.	SHT. NO.	REV. NO.
990	L	AC-036655	001	06